

## PATENT ABSTRACTS OF JAPAN

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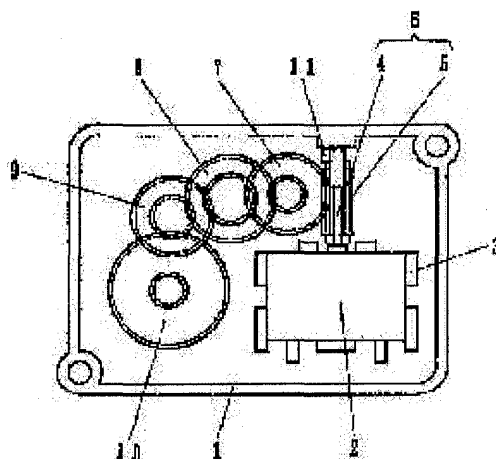
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### (54) GEARED ACTUATOR

(57)Abstract:

**PURPOSE:** To provide an extremely good geared actuator by which an improvement on the side of a motor is not required and in which contact sound and vibration generated at the motor itself are prevented by a simple constitution.

**CONSTITUTION:** A geared actuator is provided with a motor 2 mounted on a housing 1, with an output part 6 formed at the motor 2 in order to transmit the power of the motor and with an output gear 10 installed at the housing 1 to supply a prescribed power to an external apparatus so as to be interlocked with the output part 6. In the geared actuator, a side pressure adding means 11 provided with elasticity is installed at a part of the housing 1, and the output part 6 is biased in its radial direction by the side-pressure addition means 11 so as to restrain an output shaft 4 and a bearing from being rattled.



### LEGAL STATUS

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] this invention relates to a \*\*\*\*\* actuator and it is related with preventing the ambient noise specifically generated at the time of motorised, and vibration.

[0002]

[Description of the Prior Art] There was what is shown in drawing 5 as a conventional \*\*\*\*\* actuator. In drawing 5, 1 is housing which consists of resin molding, and the motor 2 is carried in this housing 1. The position fixes this motor 2 by the projected part for a motor positioning 3 formed in housing 1. And the worm gearing 5 is inserted in the output shaft 4 of a motor 2, and the output section 6 of a motor 2 consists of this output shaft 4 and worm gearing 5.

[0003] Moreover, 7 is the 1st gear, and this 1st gear 7 is attached so that it may gear to a worm gearing 5 and it may be interlocked with. The power of a motor 2 was what is transmitted to this 1st gear 7 from the output section 6, is finally further changed into the predetermined power in the output gear 10 through the 2nd and the 3rd gear 8 and 9, and is supplied to an external device.

[0004]

[Problem(s) to be Solved by the Invention] However, although path clearance exists in the motor 2 between an output shaft 4 and bearing and contact sound and vibration usually occurred on the motor itself by this path clearance at the time of motorised, it was what affects even the equipment which carried the motor by this. it is going to solve this by the motor side -- being alike -- the path clearance of a shaft and bearing -- the minimum -- it must stop -- a productivity -- or difficult, even if it considered in cost

[0005] Then, in this invention, the above problems are solved and it is in offering a very good \*\*\*\*\* actuator by preventing the contact sound and vibration which are generated on the motor itself by the easy configuration, without needing enhancement of a motor.

[0006]

[Means for Solving the Problem] The motor by which the \*\*\*\*\* actuator of this invention was carried in housing, In the \*\*\*\*\* actuator which has the output section prepared in the aforementioned motor in order to transmit the power of this motor, and the output gear which is prepared in the aforementioned housing, is interlocked with the aforementioned output section, and supplies predetermined power to an external device A lateral-pressure addition means to have a springiness in a part of aforementioned housing is established, and it is made to make the aforementioned output section energize in the orientation of a path by this lateral-pressure addition means. It is good to make the aforementioned lateral-pressure addition means contact the side of the aforementioned output section. Moreover, you may make the aforementioned lateral-pressure addition means contact underneath the aforementioned output section.

[0007]

[Function] If a lateral-pressure addition means to have a springiness in a part of housing is established and it is made to make the aforementioned output section energize in the orientation of a path by this lateral-pressure addition means, it can stop with [ of an output shaft and bearing ] backlash.

[0008]

[The 1st example] Drawing 1 is a main plan of the \*\*\*\*\* actuator in which the 1st example of this invention is shown. Moreover, drawing 2 is a main side elevation in drawing 1. In drawing 1, 1 is housing which consists of a resin etc. and the motor 2 is carried in this housing 1. The position fixes this motor 2 by the projected part for a motor positioning 3 formed in housing 1. And the worm gearing 5 is inserted in the output shaft 4 of a motor 2, and the output section 6 of a motor 2 consists of this output shaft 4 and worm gearing 5.

[0009] Moreover, 7 is the 1st gear, and this 1st gear 7 is attached so that it may gear to a worm gearing 5 and it may be interlocked with. The output of a motor 2 is transmitted to this 1st gear 7 from the output section 6, finally is further changed into the predetermined power in the output gear 10 through the 2nd and the 3rd gear 8 and 9, and is supplied to an external device.

[0010] It is the same as that of the former so far. Having made the lateral-pressure addition means 11 contact the side of the output section 6 of a motor 2 differs from the former here. This lateral-pressure addition means 11 has a springiness, and as shown in drawing 2, it is started and formed in housing and one. In addition, for example, when a springiness does not follow

on the housing itself, a lateral-pressure addition means may consist of an another member with housing. However, it comes out of another member to have a springiness required also by that case. And as shown in drawing 2 , this lateral-pressure addition means 11 is arranged, as the edge of a worm gearing 5 is contacted, so that it may have by the elastic force of oneself and the output section 6 may be made to energize in the orientation of a path. By this configuration, an output shaft 4 maintains the status that it was always contacted by bearing, and stops with [ of an output shaft 4 and bearing ] backlash.

[0011]

[The 2nd example] Drawing 3 is a main side elevation of the \*\*\*\*\* actuator in which the 2nd example of this invention is shown. Drawing 3 is shown in the same fraction as drawing 2 using the same sign. In drawing 3 , it replaces with applying a lateral pressure to a longitudinal direction to the output section 6, as shown in drawing 2 , and a lateral pressure is applied in the vertical orientation. Even if it does in this way, it is possible to stop with [ of an output shaft 4 and bearing ] backlash.

[0012]

[The 3rd example] Drawing 4 is a main plan of the \*\*\*\*\* actuator in which the 3rd example of this invention is shown. Drawing 4 is shown in the same fraction as drawing 1 using the same sign. In drawing 4 , an output shaft 4 is made to project from a worm gearing 5, and the lateral-pressure addition means 11 is arranged so that the edge of this output shaft 4 may be contacted. Thus, it can also stop with [ of an output shaft 4 and bearing ] backlash. In addition, although the output shaft 4 and the worm gearing 5 are constituted from each above-mentioned example as output section 6 of a motor, a direct screw slot is formed not only in this but in the output shaft 4, and it is good also as output section. In short, the fraction which transmits the power of the motor outside is described as the output section of the motor in this invention, and this invention is to have established a means to apply a lateral pressure to this fraction.

[0013]

[Effect of the Invention] The lateral-pressure addition [ which has a springiness in a part of housing according to / like / this invention ] means described above is established, the contact sound and vibration which had been generated with [ the ] backlash since it stopped with [ which is produced by the path clearance of an output shaft and bearing by having constituted so that the aforementioned output section might be made to energize in the orientation of a path by this lateral-pressure addition means ] backlash are prevented, and a good \*\*\*\*\* actuator can be offered. And if constituted in this way, it is not necessary to perform the severe design change by the side of a motor etc., and a cheap \*\*\*\*\* actuator can be offered. Moreover, since the aforementioned lateral-pressure addition means is made to only contact the side or the lower part of the aforementioned output section, a moderate lateral pressure can be applied with a very easy configuration.

[0014]

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the main plan of the \*\*\*\*\* actuator in which the 1st example of this invention is shown.

[Drawing 2] It is a main side elevation in drawing 1.

[Drawing 3] It is the main side elevation of the \*\*\*\*\* actuator in which the 2nd example of this invention is shown.

[Drawing 4] It is the main plan of the \*\*\*\*\* actuator in which the 3rd example of this invention is shown.

[Drawing 5] It is the main plan of the conventional \*\*\*\*\* actuator.

[Description of Notations]

- 1 .... Housing
- 2 .... Motor
- 4 .... Output shaft
- 6 .... Output section
- 10 .... Output gear
- 11 .... Lateral-pressure addition means

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[Translation done.]

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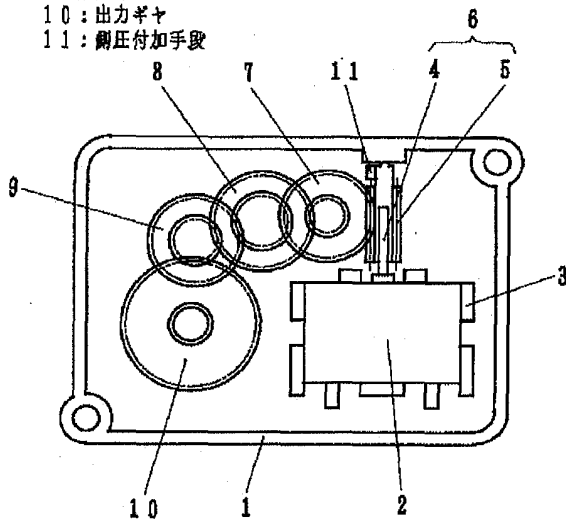
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DRAWINGS

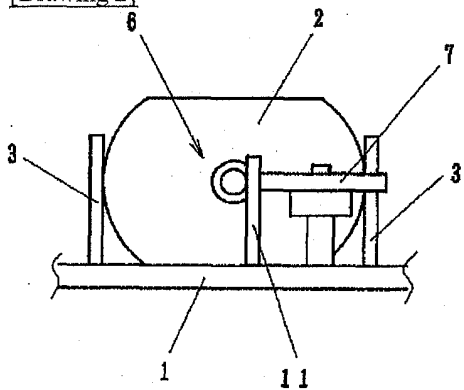
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[Drawing 1]

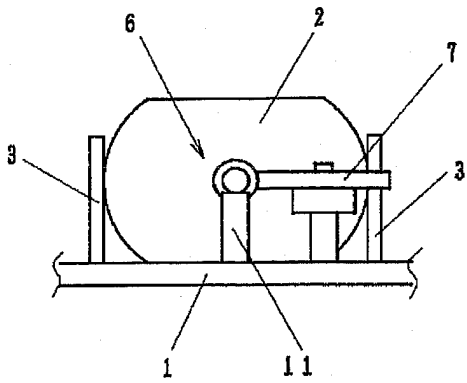
- 1 : ハラツング
- 2 : モータ
- 4 : 出力軸
- 6 : 出力部
- 10 : 出力ギヤ
- 11 : 鋼圧付加手段



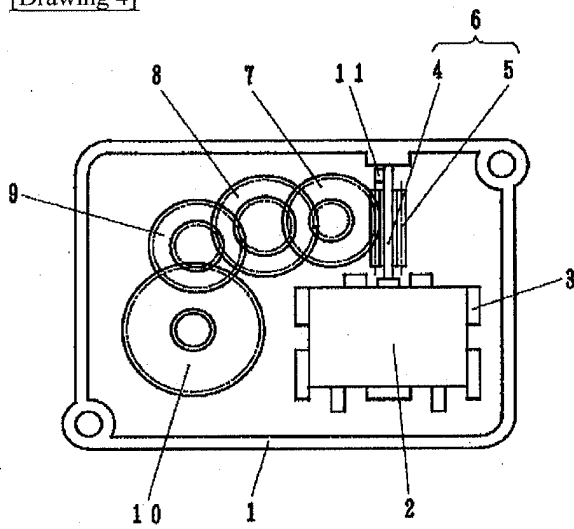
[Drawing 2]



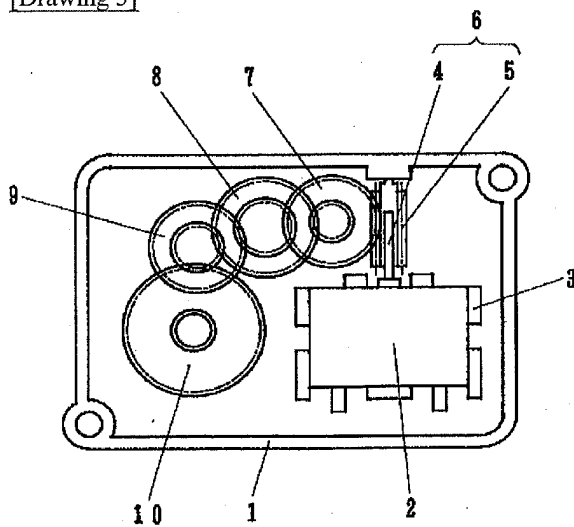
[Drawing 3]



[Drawing 4]



[Drawing 5]



[Translation done.]